

from Tomdeelys, Co. Limerick, Ireland. The specimen lacks the body-chamber, the anterior end of the specimen being the surface of the last septum. Although this septal surface is incomplete, there is sufficient to show clearly that the species belongs to the genus *Brancoceras*. This was the only example known to De Koninck.

Affinities and Differences. The closed umbilicus, the wide umbilical depression, the ornaments of the test, and the form of the suture-line at once distinguish the present species both from *Glyphioceras striatum*, J. Sowerby, sp., and *Glyphioceras crenistria*, J. Phillips, sp.

LX.—*Note on the Occurrence of Cytheridea castanea, G. S. Brady, in a Surface-deposit in the Vicinity of Buenos Ayres, South America.* By THOMAS SCOTT, F.L.S.

[Plate XVI.]

DARWIN, when describing the surface-geology of the Pampas in his 'Geological Observations on South America,' alludes to the occurrence of shell-bearing sand-dunes on the shores of the Rio de la Plata and elsewhere in the province of La Plata. Numbers of these dunes are to be found in the vicinity of Buenos Ayres, especially towards the shores of the estuary of the Plate. The dunes referred to are generally more or less covered with vegetation, but in some instances, where the vegetation is displaced, a shell-bed a few inches thick and of a darker colour and firmer consistency than the sand is seen to stretch across each of the dunes in a nearly horizontal position. It is in this shell-bed that the *Cytheridea* was obtained that forms the subject of this note.

Buenos Ayres, being an important seaport, is frequently visited by ships trading to South America. My younger son, Mr. John Scott, is a marine engineer, and his ship happened to be at Buenos Ayres for several days during January last year (1898). My son is interested in natural history, and, being ashore, he took the opportunity to examine a few of the sand-dunes in the vicinity of the harbour of Buenos Ayres and also to collect a quantity of the material in which the shells are embedded. In collecting this material he first scraped away the surface-matter, then, digging well into the shell-bed, removed what he considered to be a fair sample of the material; this he brought home on his return to England. I made a careful examination of the material my son had brought to me, and obtained from it a number of different kinds of fossils; the most common species obtained was *Azara labiata*, d'Orb., a bivalve mollusk mentioned by Darwin as

abundant in the sand-dunes near San Pedro on the River Paraná and in shell-beds at San Isidro. The remains of this mollusk occurred mostly in the form of single valves or portions of valves, only in a few instances were the specimens complete, and in every case the valves of the more perfect specimens were kept together only by the mud in which they were embedded. *Paludistrina*, a small spiral univalve, was also moderately frequent. The remains of a small *Balanus* were occasionally observed, and one or two of the valves of *Azara* had each a *Balanus* adhering to them. A few Foraminifera, seeds of plants, and some other things were also noticed; but the most interesting of all the fossils obtained was the Ostracod already referred to, viz. *Cytheridea castanea*, G. S. Brady.

Cytheridea castanea was described and figured by Prof. Brady in 1870 in 'Les Fonds de la Mer,' vol. i. p. 117, pl. xiii. figs. 19-21, pl. xiv. figs. 1, 2*. This Ostracod was dredged by the Marquis de Folin in the Bay of Biscay and at Port Said, and these two places are apparently the only localities where the species has been obtained hitherto. Prof. Brady very kindly examined a few of the Buenos Ayres specimens, and is satisfied that they belong to the same species as his *Cytheridea castanea*. I may mention, however, that in all the specimens from Buenos Ayres which I have observed there is a slight depression that extends obliquely across both valves of the Ostracod, as shown by figures 2 and 3 (Pl. XVI.). In some of the specimens the depression is scarcely so conspicuous as it is in others, and it is best seen when the light strikes lengthways across the shell. *Cytheridea castanea* does not appear to have previously been recorded from South America even as a fossil; its occurrence in the shell-bed at Buenos Ayres is therefore of interest, more especially as it appears to be moderately frequent in the deposit. I have obtained a considerable number of specimens in the sample of the deposit which my son brought home, and, curiously, it was the only Ostracod observed.

Prof. Rupert Jones, to whom I desire to express my indebtedness for information concerning the fossil Entomostraca of South America, has published one or two papers in which are described a number of forms that were obtained during the excavations for a new railway in Bahia †. The

* See also the "Mon. of the Mar. and Freshw. Ostrac. of the N. Atlantic and N.W. Europe," Trans. Roy. Dubl. Soc. vol. iv. ser. 2, p. 175, pl. xxi. figs. 3, 4 (1889).

† "Fossil Entom. from S. America," Geol. Mag. dec. iv. vol. iv. pp. 259-265 & 289-293, pls. ix., x. (1897).

species recorded by Prof. Jones include several Ostracoda, but none of them appear to belong to the *Cytheridea* referred to here. Moreover, the shell-bed in which this Ostracod occurs is apparently referable to a later date than the deposit in which the Bahia fossils were obtained that are described by Prof. Jones.

The *Azara* is said to be still living in the estuary of the Plata, and probably the *Cytheridea* may also be still living there; for if the same conditions that were suitable to the existence of the *Azara* when the bed in which they are now found fossil was being formed were also congenial to the *Cytheridea*, it is reasonable to suppose that the conditions under which the mollusk is living now will also be favourable to the existence of the Ostracod.

The figures on the annexed Plate XVI. represent (1) a sketch (fig. 1), drawn from memory by Mr. John Scott, of two of the dunes, to indicate approximately the position of the shell-beds in which the fossils occur, and (2) two drawings (figs. 2 and 3) by Mr. A. Scott, showing a lateral and a dorsal view of the Ostracod, prepared from Buenos Ayres specimens.

LXI.—*Embryology of Ophiocoma echinata, Agassiz.*
(Preliminary Note.) By C. GRAVE*.

THE conflicting results of previous investigators, and the need of confirmation of some of the results obtained by them upon Ophiurid development, seemed to warrant my undertaking a new investigation of the subject; and by the advice of Prof. W. K. Brooks it was made my principal object while in Jamaica during the summer of 1897 to obtain a series of embryological material extending at least from the segmentation stages to the beginning of metamorphosis.

But when I arrived at Port Antonio on June 14th I found that in no species at hand had the breeding-season begun except with *Ophiocoma Riisei*, with which it was over, and it was not until less than three weeks of the end of my stay that the first ripe eggs were thrown by *Ophiocoma echinata*, although ripe spermatozoa had been obtained every day for more than a month.

In consequence of this the oldest plutei reared were but

* From the 'Johns Hopkins University Circulars,' November 1898, pp. 6-7.